# Mechanism Drawing & Stereochemistry

Ten multi-step questions • Draw curved arrows, products and relevant stereochemistry

Name: _____ Date: _____

Directions: Draw clear structures and curved arrows in the blank space. Include major products, minor products when asked, and stereochemistry where appropriate. Use standard organic mechanisms and check carbon valences.

**1.** Iodomethane + NaCN in DMSO. Draw electron-pushing arrows for the substitution and name the organic product.

**2.** 1-Bromobutane + NaN3 in DMF. Draw the arrow-pushing pattern and identify the product.

**3.** (R)-2-Bromobutane + NaSH in DMSO. Draw the substitution product using wedge/dash stereochemistry. Explain how the stereocenter changes.

**4.** 2-Bromo-2-methylpropane + NaOEt in ethanol, heated. Draw the major organic product and all three electron-flow arrows for the elementary elimination.

**5.** 2-Methyl-2-butanol + sulfuric acid, heated. Draw the steps that make the leaving group favorable and identify the major and minor alkenes.

**6.** tert-Butyl chloride in water at room temperature. Name two mechanistic pathways and their principal organic products.

**7.** Bromocyclohexane + KOtBu in tert-butanol, heated. State the required chair geometry, whether a ring flip can help, and the product.

**8.** 2-Bromobutane + NaOEt in ethanol, heated. Identify the typical major alkene stereoisomer and at least two competing alkene products.

**9.** Neopentyl bromide, (CH3)3CCH2Br, with NaI in acetone at room temperature. Explain why substitution is unusually slow and why E2 is unavailable.

**10.** 1-Methylcyclohexanol with phosphoric acid, heated. Explain the likely mechanism and draw the more-substituted alkene product.